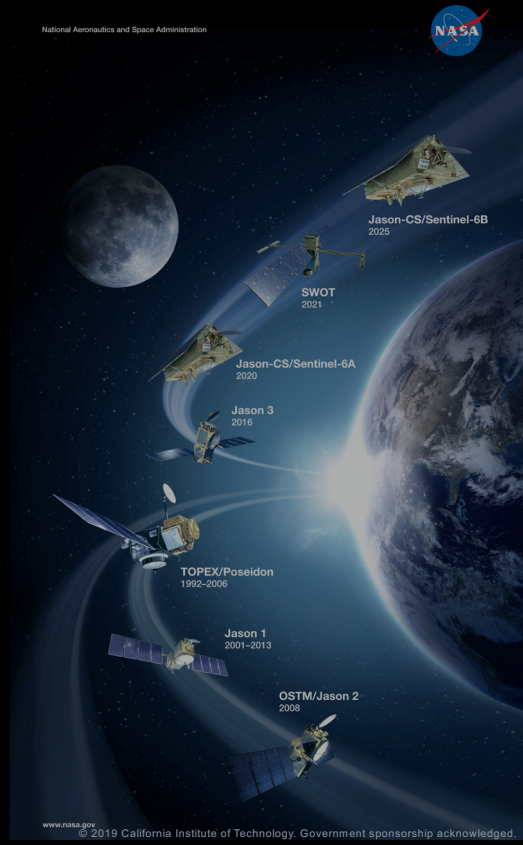
Jet Propulsion Laboratory
California Institute of Technology

podaac
Physical Oceanography Distributed Active Archive Center

Upcoming Services for Surface Water at PO.DAAC

Catalina Oaida*, Michael Gangl, Jessica Hausman, Suresh Vannan

Jet Propulsion Laboratory, California Institute of Technology



December 12, 2019
American Geophysical Union
Fall Meeting
San Francisco, California

Contact:
Catalina.Oaida@jpl.nasa.gov

Physical Oceanography Distributed Active Archive Center (PO.DAAC)

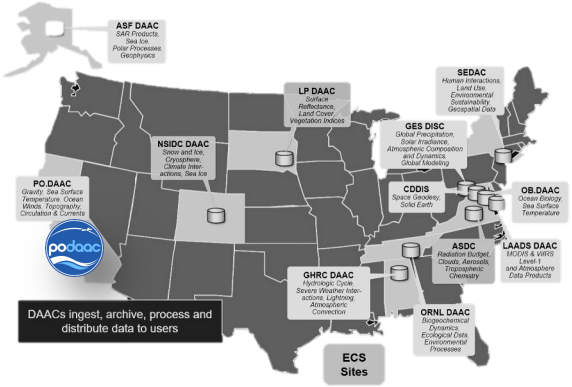
https://podaac.jpl.nasa.gov/

EOSDIS
NASA'S EARTH OBSERVING SYSTEM DATA & INFORMATION SYSTEM

Process

Archive

Distribute



Tools

Discover

Visualize

Access

Missions Supported

PO.DAAC supports a large fleet of Earth Observing missions, putting key data directly into the hands of Earth science researchers so that they can address key questions about the oceans, environment, and global climate change.

podaac.jpl.nasa.gov/missions

600+ datasets

250+ TB of data

15+ million data files

50,000 distinct users served

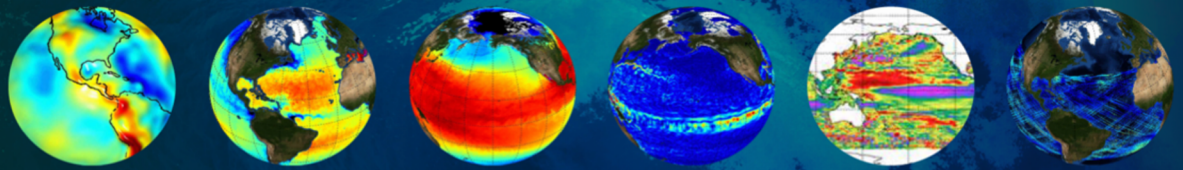
50+ datasets published each year

20+ earth observing missions supported

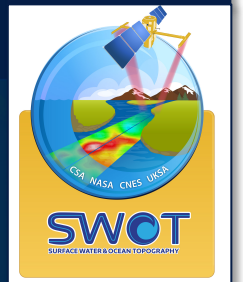
Data Parameters

Learn about core measurements, related missions and instruments

podaac.jpl.nasa.gov/CoreMeasurements



~26 PB active data volume

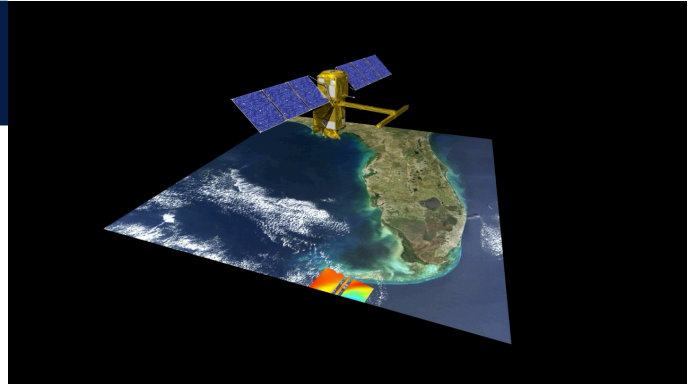


PO.DAAC is the primary NASA archive for SWOT (Surface Water and Ocean Topography)

Surface Water and Ocean Topography (SWOT)

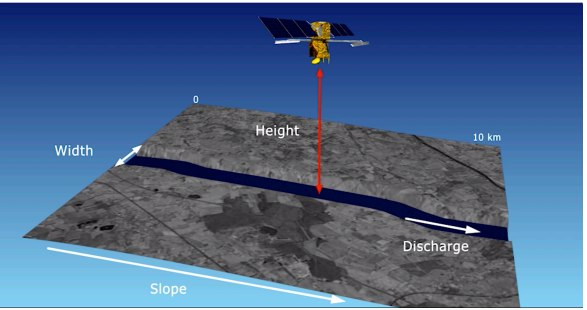
https://podaac.jpl.nasa.gov/SWOT

SWOT launch
September 2021
PO.DAAC is the primary NASA archive for SWOT



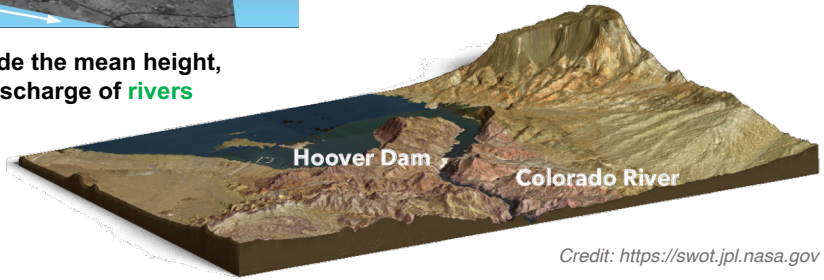
Credit: NASA/JPL-Caltech

SWOT will measure global ocean surface topography and land surface water elevation with great accuracy using interferometry.



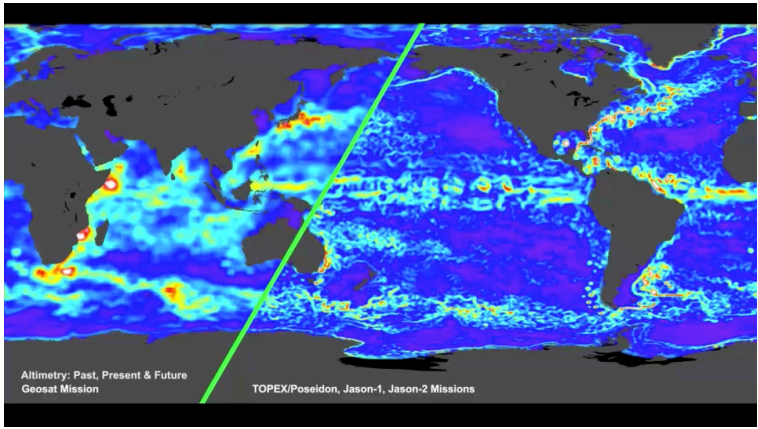
SWOT is set to provide the mean height, width, slope and discharge of rivers

SWOT is set to survey the height, area and changes in volume over time of lakes and reservoirs



Credit: https://swot.jpl.nasa.gov

Characterize the ocean mesoscale and sub-mesoscale circulation (15 – 200 km or about 9 – 124 mi, overall) at spatial resolutions of 15 km (~9 mi) and greater.



Credit: PO.DAAC

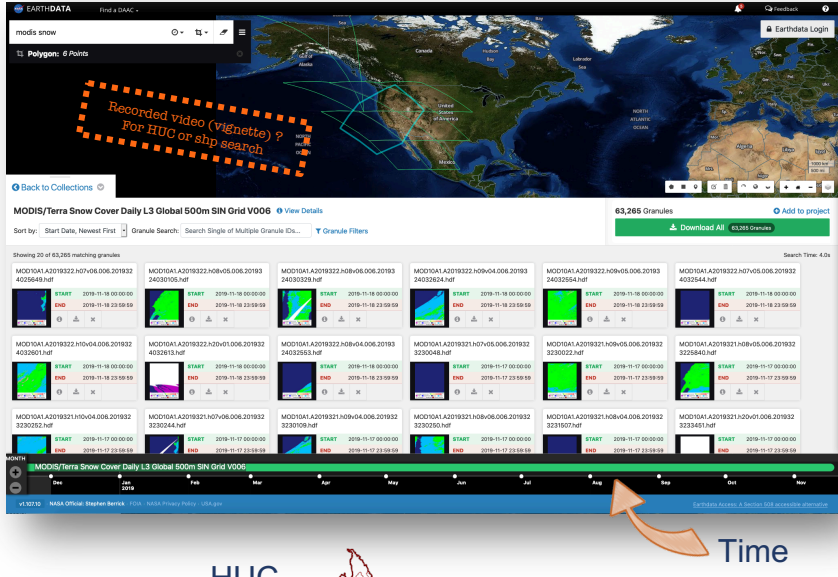
Applications:

- Flood and Drought Monitoring
- Water Resources Management
- Inland and Coastal Commerce
- Coastal Zone Management
- Climate and Weather

Search

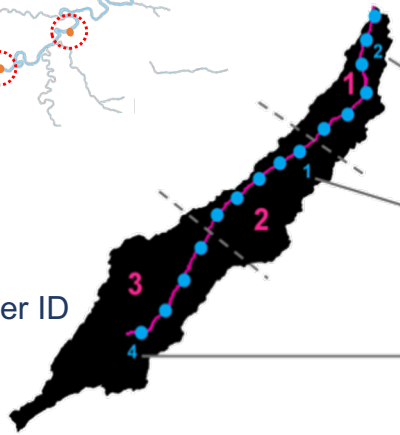
Point-Radius

Polygon



Time

SWOT River ID



CBBBBBRRRNNNT *(all will be integers)*

- C – Continent
- B – Pfafstetter Basin Code
- R – Reach Number
- N – Node Number
- T – Type

7429820010021 *(node id)*
7429820011 *(reach id)*

7429820020011 *(node id)*
7429820021 *(reach id)*

7429820030041 *(node id)*
7429820031 *(reach id)*

Transformations

Re-project

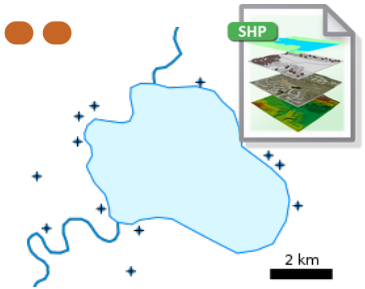
Re-grid

Time Series

.shp → .tiff, .gpk, .kmz

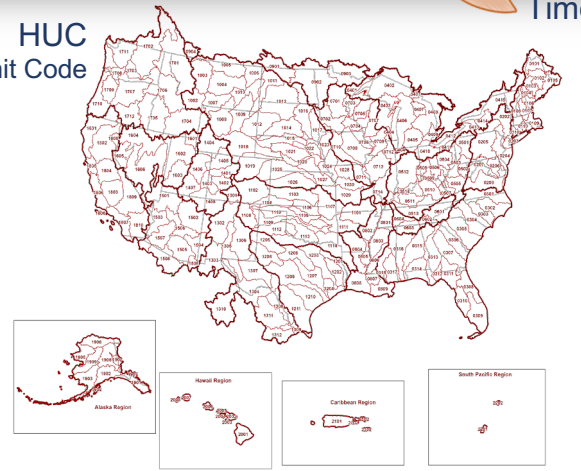
Reformat

Subset

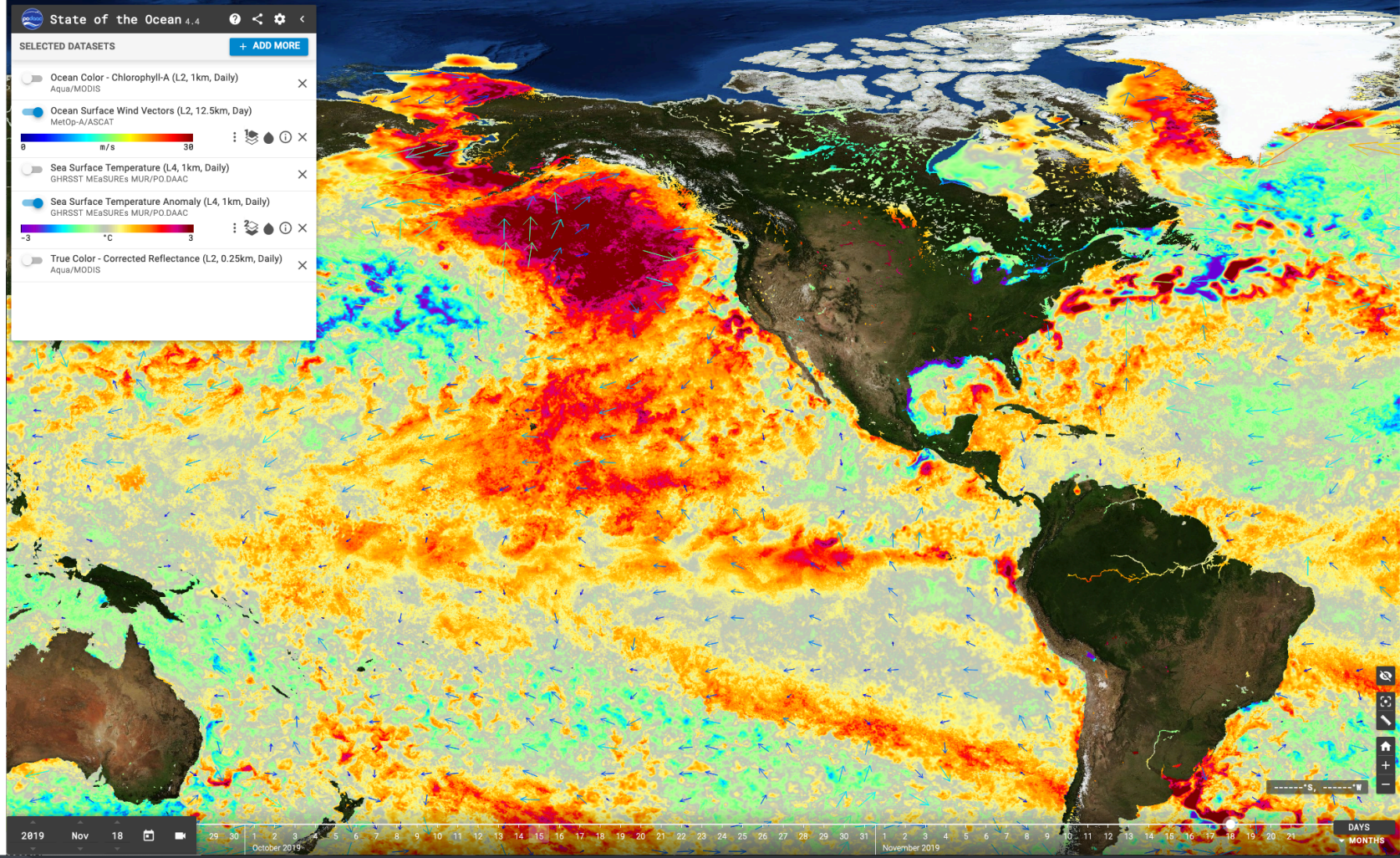


Custom Shapefile

HUC
Hydrologic Unit Code



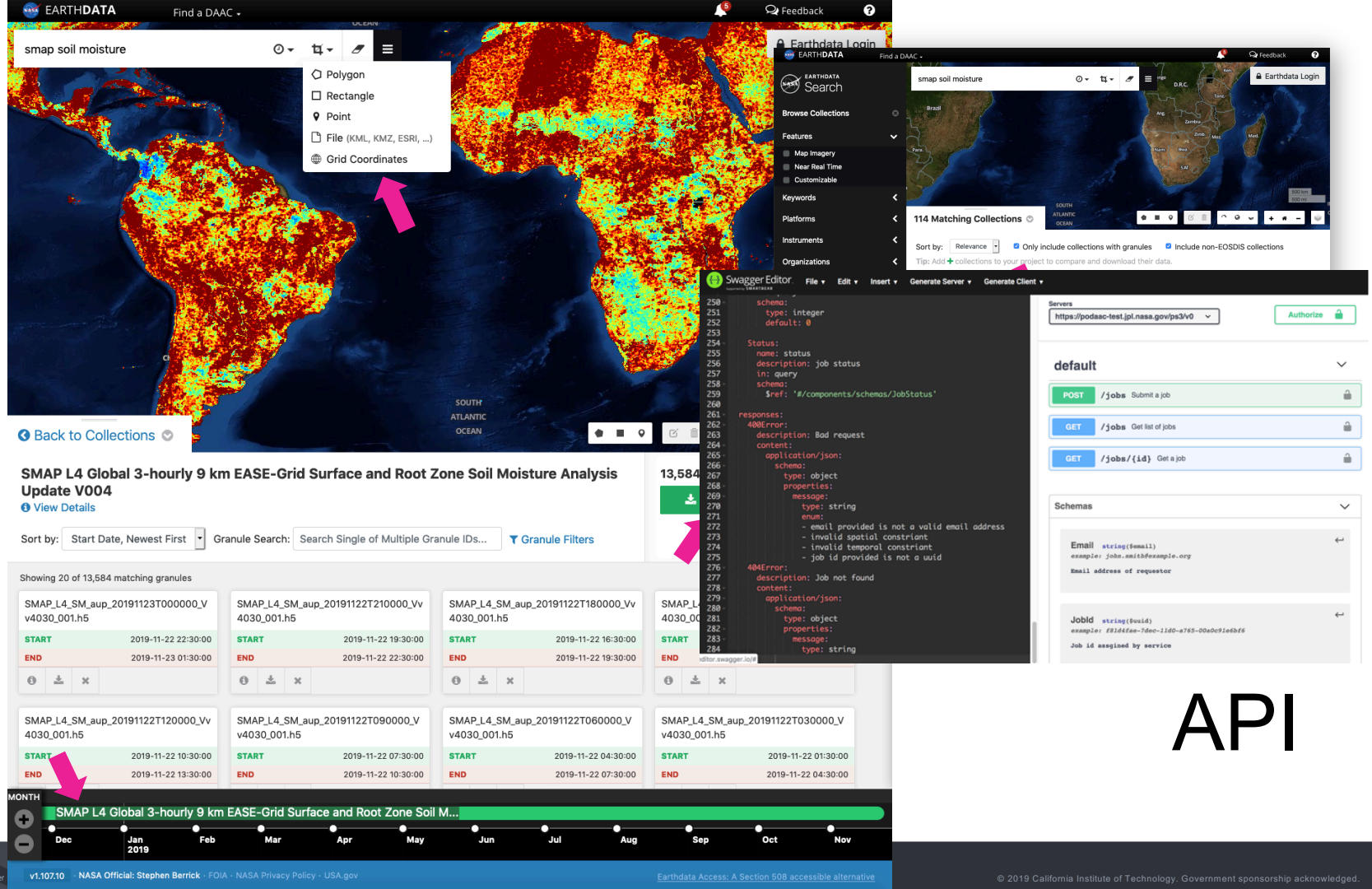
Visualize



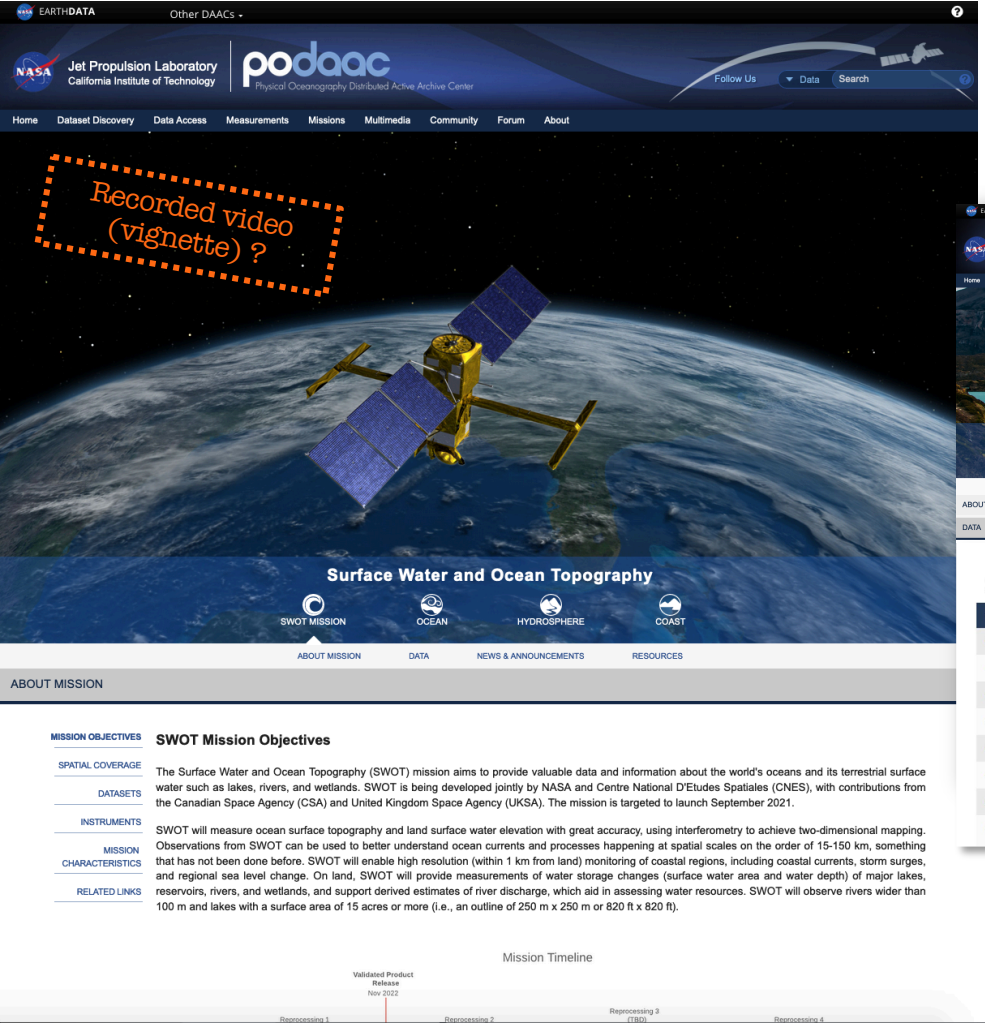
Data Access

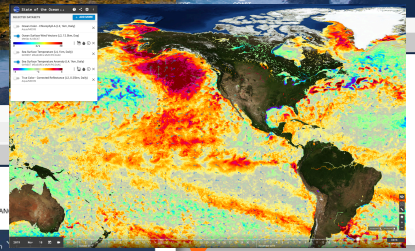
GUI

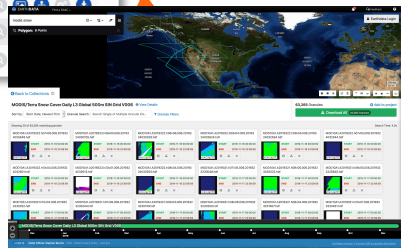
API



PO.DAAC SWOT Portal







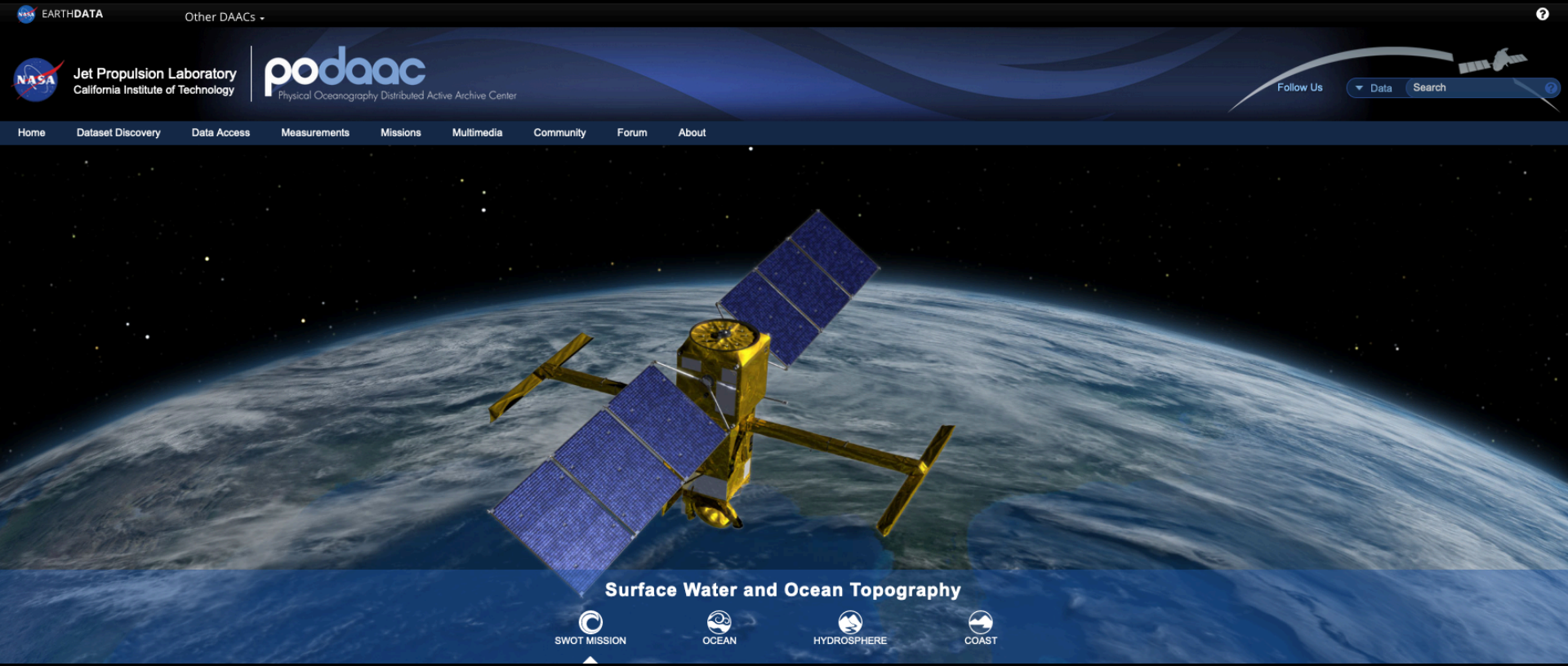
Under Development

https://podaac.jpl.nasa.gov/swot

https://podaac.jpl.nasa.gov/
@podaac

Thank You!

https://podaac.jpl.nasa.gov/SWOT

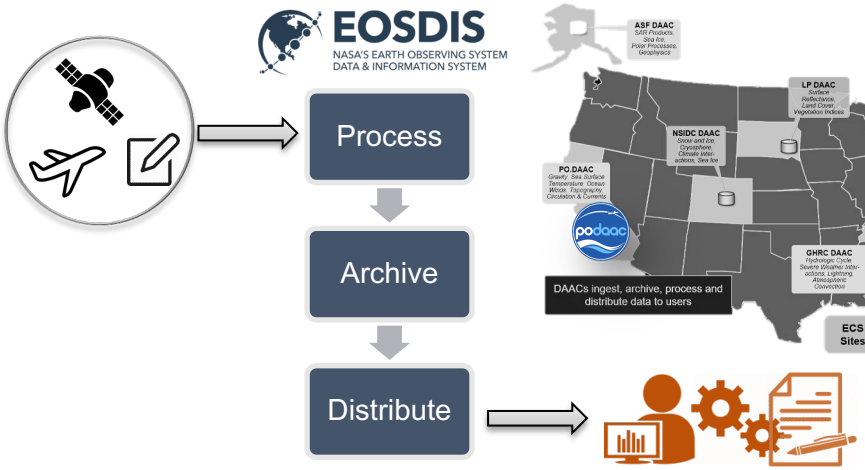


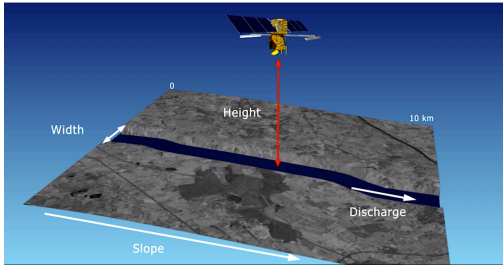
Contact: Catalina.Oaida@jpl.nasa.gov

extras

Physical Oceanography Distributed Active Archive Center (PO.DAAC)

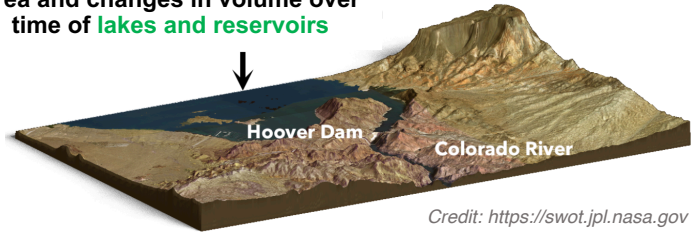
https://podaac.jpl.nasa.gov/



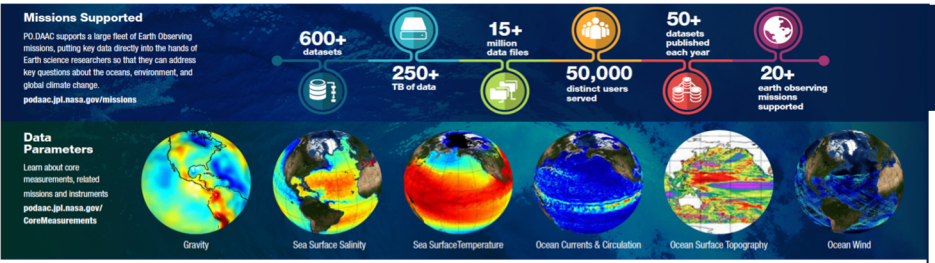


SWOT is set to provide the mean height, width, slope and discharge of rivers

SWOT is set to survey the height, area and changes in volume over time of lakes and reservoirs

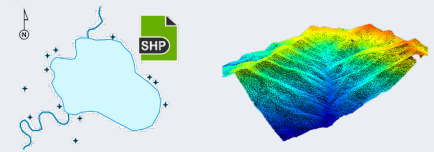


Credit: https://swot.jpl.nasa.gov



Launch Fall 2020
26 PB total mission volume

SWOT will measure global ocean surface topography and land surface water elevation with great accuracy using interferometry.



Data Formats
- Shapefile
- Pixel Cloud (netCDF)

Applications:
- Flood and Drought Monitoring
- Water Resources Management
- Inland and Coastal Commerce
- Coastal Zone Management
- Climate and Weather

Slide 6: and how these new/migrated functionalities are folded in
draw in column that shows tools/service and data in one place - to be developed